From: Berg, Marlene
To: Tzhone, Stephen
Cc: Crumbling, Deana; Poore, Christine; Bartenfelder, David
Subject: Additional Arkwood info for Wednesday meeting
Date: Tuesday, April 28, 2015 3:05:44 PM

Steve,
Some additional information from Deana for our meeting tomorrow.
Marlene

From: Crumbling, Deana
Sent: Tuesday, April 28, 2015 3:57 PM
To: Berg, Marlene
Subject: RE: Arkwood question

Hi Marlene: send this to R6….

Deana comments on data review: I calculated TEQs from the raw data, compared my TEQs to theirs (they match pretty well since there are few ND congeners in the data set), and calculated DU UCLs and compared to their UCLs. There are differences between mine and theirs due to the following:
1) They are "adjusting" the sample TEQ concentrations downward based on the amount of coarse (>2 mm) fraction that was removed from the sample. That adjustment is not appropriate since we are interested in the dioxin TEQ concentration in soil, and soil is the material <2 mm. "Adjusting" (reducing) the concentration to account for the amount of coarse material is not proper.

2) They are defaulting to the max DU sample result if the UCL for the DU is higher than the max result (which usually it is). This is definitely not acceptable for data generated from incremental sampling (as I carefully explained to them previously in comments). Either the mean of the SUs or the UCL on that mean should be used, depending on the desires of the project's risk assessor and project manager.

3) When calculating the DU mean & UCL, they are using all results (including the ones from field and lab replicates) as if they were all independent SU results. But field and lab replicates are not independent SU results, and cannot be averaged together as if they are. The preferred was to handle replicates when calculating DU statistics is to use the first replicate result only. Under some circumstances, an argument can be made to average the replicates and use the average value as an SU result. I have calculated DU statistic using the first replicate result only.

4) They are using the Chebyshev equation incorrectly, so that their Chebyshev UCLs are calculating out a bit lower than they should be. But with all the other issues, this probably causes the least difference between mu UCLs and theirs.

From: Berg, Marlene
Sent: Tuesday, April 28, 2015 3:55 PM
To: Crumbling, Deana

Subject: Re: Arkwood question

Thanks

From: Crumbling, Deana
Sent: Tuesday, April 28, 2015 3:33 PM
To: Berg, Marlene
Subject: RE: Arkwood question

I think it would be good to share before the mtg in case they think of any questions for me.

From: Berg, Marlene
Sent: Tuesday, April 28, 2015 3:32 PM
To: Crumbling, Deana
Subject: Re: Arkwood question

Sorry, one more thought.
Would it be a good idea to share your email with Region 6 before the meeting tomorrow?

From: Berg, Marlene
Sent: Tuesday, April 28, 2015 3:30 PM
To: Crumbling, Deana
Subject: Re: Arkwood question

Deana,
Thanks very much.
Would it be alright if you discuss this at our meeting tomorrow with Region 6?
Marlene

From: Crumbling, Deana
Sent: Tuesday, April 28, 2015 3:00 PM
To: Berg, Marlene
Subject: RE: Arkwood question

Here is my analysis of the data. The first sheet is my summary of the analysis showing the UCLs that should be used.

There are a number of issues with their work.
1) In addition to "adjustments" that are not legit according to the definition of soil,
2) they are defaulting to the max result if the UCL is higher (which usually it is), which is not correct for data from incremental sampling (as I carefully explained to them previously in comments), and
3) they are using the Chebyshev equation incorrectly, so that their Chebyshev UCLs are calculating out a bit lower than they should be.

--Deana

From: Berg, Marlene
Sent: Tuesday, April 28, 2015 10:24 AM
To: Crumbling, Deana
Subject: Re: Arkwood question

Deana,
Thanks very much w/r to using the unadjusted data.
And, I will await your final analysis.
Marlene

From: Crumbling, Deana
Sent: Tuesday, April 28, 2015 10:18 AM
To: Berg, Marlene
Subject: RE: Arkwood question

Ok, I'm reading through the document, and they "adjusted" the TEQ concentration based on the coarse (>2 mm) fraction that was removed from the sample. That adjustment is not appropriate since the we are interested in the dioxin TEQ concentration in "soil", and soil is the material <2 mm. So "adjusting" (reducing) the concentration to account for the amount of coarse material is not proper.

So use the unadjusted concentrations in the document.

Also, I'm attaching the TEQ data I got by running their raw data through the EPA TEQ Calculator. There may be a difference between my TEQ results and theirs…haven't gotten a chance to evaluate that yet. I'm still working on understanding which DUs the samples represent and which ones have field vs lab replicates so I know how to crunch the DU results appropriately to get UCLs.

--Deana

From: Berg, Marlene
Sent: Tuesday, April 28, 2015 8:34 AM
To: Crumbling, Deana
Subject: Arkwood question

Deana,
As per my voice mail message, in looking at the PRP's March 31, 2015, draft dioxin reassessment, do you recommend that we use the unadjusted or the adjusted TEQ concentrations for the dioxin in soil?

Marlene